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**A RAND NOTE**

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SAN ANTONIO REAL PROPERTY MAINTENANCE AREA:  
OVERVIEW OF A REGIONAL CONSOLIDATION OF  
BASE SUPPORT SERVICES

H. G. Massey

May 1983

N-2002-AF

Prepared for

The United States Air Force

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This Note reports on a survey of operating experience in the San Antonio Real Property Agency (SARPHA)--an organization formed to consolidate buildings and grounds maintenance functions for four Air Force bases, an Army post, and several smaller, auxiliary facilities in and around San Antonio, Texas. The information collected in the survey suggests that: SARPHA is probably not achieving the primary purpose of the consolidation--to provide real property maintenance services to its customer bases at lower cost to the government. The centralized organization is less responsive to providing services than conventional, base-level organizations, and it is less sensitive to the urgency and priorities of the bases' requirements. Management innovations and improvements have been and are being undertaken, but some of these can probably be applied to base-level organizations and provide similar benefits without requiring consolidation. The conclusions regarding costs are tentative because no full cost analysis of SARPHA operations has been done.

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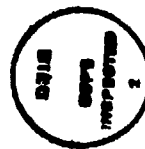
## PREFACE

Consolidation of functions within the Air Force and the other military services, or across service lines, has long been favored by some within Congressional circles, the General Accounting Office, and the Department of Defense as a means of improving the efficiency of DoD operations. Base Operating Support--those functions connected with the maintenance of real property and other base-related support services--is an area under current study where consolidation might save money and personnel resources. Rand was asked by the Air Force to look into related consolidation efforts for their costs and benefits.

This Note provides a first-order assessment of experience with a consolidation of real property maintenance services for four Air Force bases and an Army post in the San Antonio, Texas area--an arrangement known as the San Antonio Real Property Maintenance Agency (SARPM). The assessment draws on published and unpublished materials related to SARPM and on interviews with personnel at SARPM and installations it serves. It is therefore largely qualitative.

The Note was prepared as part of a concept-development project under the Project AIR FORCE Resource Management Program. It is an input to the Air Force's study of "Air Force Management of Base Operating Support Functions."

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## SUMMARY

This Note reports on a survey of operating experience at the San Antonio Real Property Agency (SARPMA)--an organization formed in 1978 to consolidate buildings and grounds maintenance functions for four Air Force bases, an Army post, and several smaller, auxiliary facilities in and around San Antonio, Texas. The survey was based on interviews with SARPMA personnel and some of its customers and on a selection of briefings, reports, and published materials. Although limited in scope, the information collected in the survey suggests that:

- SARPMA is probably not achieving the primary purpose of the consolidation--to provide real property maintenance services to its customer bases at lower cost to the government.
- The centralized organization is less responsive in providing services than conventional, base-level organizations, and it is less sensitive to the urgency and priorities of the bases' requirements.
- Management innovations and improvements have been and are being undertaken to make SARPMA's operations more efficient and more responsive, but some of these improvements can probably be applied to base-level organizations and provide similar benefits without requiring consolidation.

Because no full cost analysis of SARPMA operations has been done (by this study or others), our conclusions as to SARPMA costs must be tentative. Because this type of consolidation is being considered for broader application, we recommend that:

- A thorough cost/benefit study of SARPMA should be undertaken to determine specific areas where regional consolidation may permit cost savings.

- If other base support services are proposed for consolidation, SARPMA should be considered as a testbed for evaluating the costs and benefits of such consolidation before it is implemented widely.

**CONTENTS**

PREFACE .....	iii
SUMMARY .....	v
Section	
I. INTRODUCTION .....	1
Background .....	1
Objectives of the Consolidation .....	2
Outline of the Note .....	4
II. EVALUATION--ACHIEVEMENT OF OBJECTIVES .....	5
III. SARPMA ORGANIZATION, OPERATIONS, AND CUSTOMER RELATIONS .....	7
Organization and Manpower .....	7
Supply Operations .....	15
Customer Views of the Cost of SARPMA Services .....	16
Responsiveness/Adequacy of Service .....	18
General Observations and Conclusions .....	21
IV. IMPLICATIONS FOR BASE SUPPORT CONSOLIDATION EFFORTS .....	23
Consolidation Costs and Benefits .....	23
Consolidating on a Lesser Scale .....	24
Other Considerations .....	25

## I. INTRODUCTION

### BACKGROUND

Since the 1960s the General Accounting Office (GAO) has published numerous reports urging the Department of Defense (DoD) to consolidate activities within or across the Services to reduce duplication of functions. DoD has implemented a number of such consolidations, including the Defense Logistics Agency (formerly Defense Supply Agency) and established the Defense Retail Interservice Support (DRIS) program in 1972 to aggressively support agreements to achieve improvements in "overall effectiveness and economy."

The San Antonio, Texas, area appeared ideal for DRIS and other consolidation efforts because of the presence there of five major DoD installations within a 20-mile radius and because of the absence of major combat units among the organizations supported on them, suggesting that cost-effective consolidation without mission impairment was possible.

In 1973, the Assistant Secretary of Defense (Installations and Logistics), directed that the Air Force develop and implement a plan for consolidating real property services in the San Antonio area. The Air Staff developed basic organizational and operational concepts for the San Antonio Real Property Maintenance Agency (SARPMA) during 1973/1974. A cost/benefit study team, consisting of representatives from the Army and from the three Air Force major commands (ATC, AFLC, AFSC) operating bases in the area, was formed to conduct an analysis of concepts, including alternatives. Following the study, which concluded that savings in manpower and other resources could be achieved without harm to services, an implementation plan was developed. SARPMA was established and began operations on 1 October 1978 as a separate entity directly responsible to the commander of Air Training Command (ATC).

## OBJECTIVES OF THE CONSOLIDATION

The primary objective of the SARPMA consolidation was to save money--to reduce the cost to the government of providing real property maintenance services to defense installations in the San Antonio area. DoD guidance and GAO reports have repeatedly asserted that consolidations can achieve savings by

- Reducing administrative, technical, and supervisory overhead; stock levels; number of support personnel; and government investment in maintenance, equipment, and facilities.

It can also improve:

- The use of personnel, as well as the flexibility to apply skills where and when needed.
- The use of modern labor-saving equipment.
- Economies of scale with bulk purchasing.<sup>1</sup>

Although it was intended that there be no impairment of the missions of bases supported by SARPMA, it was not clear how the adequacy of RPMA support to those missions was to be measured or evaluated. The 1975 cost analysis report indicated "equally effective response to installations requirements provided by SARPMA provided that customer requests and funding for services rendered are timely."<sup>2</sup> However, no mechanism was established (other than customer complaints) for assuring that dissatisfaction by the installation managers could be translated into prompt action to alleviate the problems.

The term "real property maintenance activity" (RPMA) is interpreted in DoD to mean maintenance of land, buildings, fixed equipment, and other facilities at military installations. These functions have traditionally been handled by base civil engineering (CE) organizations

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<sup>1</sup> U.S. General Accounting Office, *Consolidating Military Base Support Services Could Save Billions*, September 5, 1980.

<sup>2</sup> Hq USAF and Hq ATC, *San Antonio Real Property Maintenance Area Cost Analysis Report*, 1975.

at each major Air Force installation and by facility engineers at Army installations. The intent of the SARPMA consolidation was to turn over to a single manager all (or most) of these functions at Brooks, Kelly, Lackland, and Randolph AFBs, Fort Sam Houston, and at several auxiliary sites in the area that had previously received CE support from one or another of the major installations. When SARPMA's organizational plans were being made, it was decided to have the bases retain the functions of airfield crash-rescue, structural fire protection and prevention, family housing, and real property management (space allocation). Also, because bases were still to retain programming authority and financial responsibility for CE services, a small staff for planning and budgeting for CE services was retained under the base/post commander at each of the five major installations.

SARPMA is responsible for its own financial and program management and administration, and for the remaining CE services:

- Maintenance and repair of all buildings, pavements, grounds, and other facilities.
- Minor construction.
- Operation of utilities.
- Refuse disposal, custodial, and entomological services.
- Payment of rental, lease, and other charges for all real property.

Base CE organizations normally receive support from existing base organizations for a number of support services, including manpower, civilian personnel, accounting and finance, procurement, and transportation. SARPMA's requirements in these areas are supported partly by functional branches attached to SARPMA and partly by host base organizations and the San Antonio Contracting Center.<sup>3</sup>

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<sup>3</sup> The San Antonio Contracting Center (formerly San Antonio Procurement Center) provides centralized procurement and contracting support to DoD operations in the San Antonio area. It is collocated with SARPMA at San Antonio Air Force Station.

Financial and planning responsibility for CE services is left with the five bases. Each base estimates its requirements, orders the necessary services from SARPMA, and pays for them. SARPMA operates under the Air Force Industrial Fund, a revolving fund that also serves Air Force Depot Maintenance and Airlift Service activities. Under the industrial fund (IF) concept, Air Force organizations can serve clients (primarily other government organizations) whose funding comes from various sources. The IF agency bills for its services at rates intended to recover the full cost of its operations; that is, overhead and other costs not directly traceable to service activities are prorated across the agency's annual total workload and included in its billing rates to customers. Hence bases served by SARPMA pay for CE services at their theoretical full (average) cost. Under a conventional base CE operation, much of the overhead cost of CE services is unseen because it is inseparable from the cost of operating base organizations. If the consolidation concept works as intended, the overhead costs for SARPMA services are offset by reductions in manpower and other costs for other base organizations.

## OUTLINE OF THE NOTE

This Note presents a brief survey of the experience to date with SARPMA and a discussion of its implications for future possible consolidations of RPMA or other base support services. It is based on interviews of SARPMA personnel and personnel at "customer" bases in the San Antonio area, and on readings of analyses, proposals, and articles dealing with SARPMA. The main purpose of this survey is to draw from the lessons that the SARPMA experience provides and achieve a better idea of the potential advantages and pitfalls to be expected in other such consolidations or reorganizations of base support management.

Section II briefly summarizes SARPMA's record in achieving its goals of equivalent service and lower cost for the functions it took over from the bases. SARPMA organization, manpower, customer views, and some other aspects of the operation are dealt with in more depth in Sec. III, and Sec. IV discusses the implications for future base support consolidation proposals.

## II. EVALUATION--ACHIEVEMENT OF OBJECTIVES

In answer to the question, "Has SARPMA achieved the hoped-for savings in costs?" we must give a qualified No. The organization has grown greatly from what was originally intended, and its overhead staff and costs have grown. Many factors have changed from the assumptions on which the 1975 cost-study conclusions, and the subsequent implementation plan, were based. Time constraints precluded undertaking a full cost analysis of current SARPMA operations in this brief survey.

Nonetheless, the preponderance of qualitative evidence and limited quantitative evidence suggest that the cost of SARPMA operations is no less than conventional, single-base CE operations, and current costs may actually be higher. There is no basis in the SARPMA experience to date for concluding that this type of regional consolidation of base support services offers very much cost savings.

One implication of the SARPMA experience is that a thorough cost/benefit analysis is needed before anyone can draw definitive conclusions about the value of consolidations in RPMA and other base support services from its four years of operations. Although no direct comparison can be made with single-base CE operations under current conditions, manpower standards and other resource estimating tools should make it possible to compare SARPMA operations with operations under five separate base CE organizations handling equivalent individual base workloads.

It is difficult to say whether *missions* have been impaired by the consolidation. SARPMA had many growing pains that resulted in customer dissatisfaction, particularly with regard to *responsiveness* to customer requests for services. The reasons for SARPMA's problems are varied, but in at least two areas--supply support and management information--the problems were largely due to diseconomies of scale. The supply and management information organizations and procedures adopted for SARPMA from single-base CE concepts were simply inadequate to support the volume of operations generated by the consolidation of demand from five major installations. The problems have long been recognized, and

management and organizational changes have been made and are still being made to improve responsiveness. Customers generally agree that service has shown steady improvement. But the fixes that have been applied thus far are also responsible for some of the overhead growth that has received so much criticism. Entirely new supply and management information systems are to be implemented at SARPMA in the near future, and they will probably improve responsiveness and efficiency as well. The organization is continually improving and is working in the sense that it is indeed providing the necessary RPMA services to its customers. But even when the new systems and concepts are fully in effect, it is not clear that a very large cost savings can be achieved over what would be the case if individual base CE organizations provided the same services, particularly if the management innovations undertaken by SARPMA were used by the base-level organizations.

### III. SARPMA ORGANIZATION, OPERATIONS, AND CUSTOMER RELATIONS

#### ORGANIZATION AND MANPOWER

##### 1975 Proposal (Cost Analysis Report)

Each of the four Air Force bases in San Antonio employed its own civil engineering (CE) organization in 1974, the baseline year for the 1975 cost study. The CE squadrons at Brooks, Kelly, Lackland, and Randolph AFBs were organized along standard Air Force lines. The squadron was commanded by the Base Civil Engineer, with an administration section (and squadron sections at Lackland and Randolph, where large numbers of military personnel were authorized in the CE squadrons), and six major branches: Programs, Engineering and Construction, Operations and Maintenance, Fire Protection, Industrial Engineering, and Family Housing Management. The Lackland CE squadron also had a branch for Wilford Hall Medical Center Support.

The Facilities Engineer at Fort Sam Houston used a different organizational form from that used by the Air Force, but essentially the same functions were performed within it. The organization was commanded by the Post Facilities Engineer and employed six divisions: Supply and Storage, Engineer Plans and Real Property, Buildings and Grounds, Work Coordinating Activity, Utilities and Pollution Control, and Fire Protection and Prevention. On both Army and Air Force installations, the Facilities/Civil Engineer reported to the Post/Base Commander, who was in charge of all base operating support functions.

The SARPMA organization proposed in the 1975 cost study divided CE functions into Operations and Maintenance (O&M) and Management and Engineering (M&E). The former consisted of functions used in day-to-day activities at the installations, such as operating utilities, mowing lawns and maintaining other landscaping, cleaning streets and pavements, and minor repair and maintenance of facilities. That workload was quite localized and was expected to remain largely with an on-base (but SARPMA-controlled) workforce. The sections/divisions of the previous CE organizations that were classified as O&M were the Wilford Hall Medical Center and Operations and Maintenance branches at the four Air Force

Bases, and the Buildings and Grounds division and Utilities and Pollution Control division at Fort Sam Houston. Together, they comprised a total of 89 shops, 24 second-level sections, and six branches/divisions. The proposed SARPMA organization reduced these to 41 shops, under six second-level sections--a field engineer section at each base/post, plus a central shop section--under a third-level division (O&M Division) reporting to the SARPMA commander. The structure of the proposed organization, including M&E functions and base-retained functions, is depicted in Fig. 1.

The manpower analysis of O&M functions in the 1975 proposal suggested a reduction from 1832 manpower authorizations to 1707, for a savings of 125 authorizations. Approximately 60 percent of the manpower savings (74 authorizations) was attributed to reductions in supervision resulting from the consolidation of various shops and sections. The remainder was attributed to actions that could be taken whether the consolidation was made or not: (1) conversion of some military positions to civilian positions and (2) the use of 1978 assigned strength as the new manning standard for shops where the assigned strength was below the 1978 authorization level.

M&E functions were split between SARPMA central and the bases/post in the proposed reorganization. The manpower analysis showed a reduction from 918 authorizations (904 assigned) in FY 1974 to 753 authorizations, for a savings of 165. Of the 753 authorizations, 396 were to be retained at base level for Military Family Housing Management, Fire Protection, and Programs (program and financial planning), with a Staff Civil/Facility Engineer heading each base-retained organization and reporting, as before, to the base/post commander. The savings in manpower were attributed both to consolidation of five organizations into one and to "operational concepts with SARPMA." The latter included the use of contract architect and engineering services and a Contractor Operated Civil Engineering Supply Store (COCESS) in the material control area. These proposed operational concepts, as well as the civilianization of M&E military positions, that were to take place under SARPMA could have been accomplished under the previous base organizations. The information published in the summary report is insufficient to permit complete

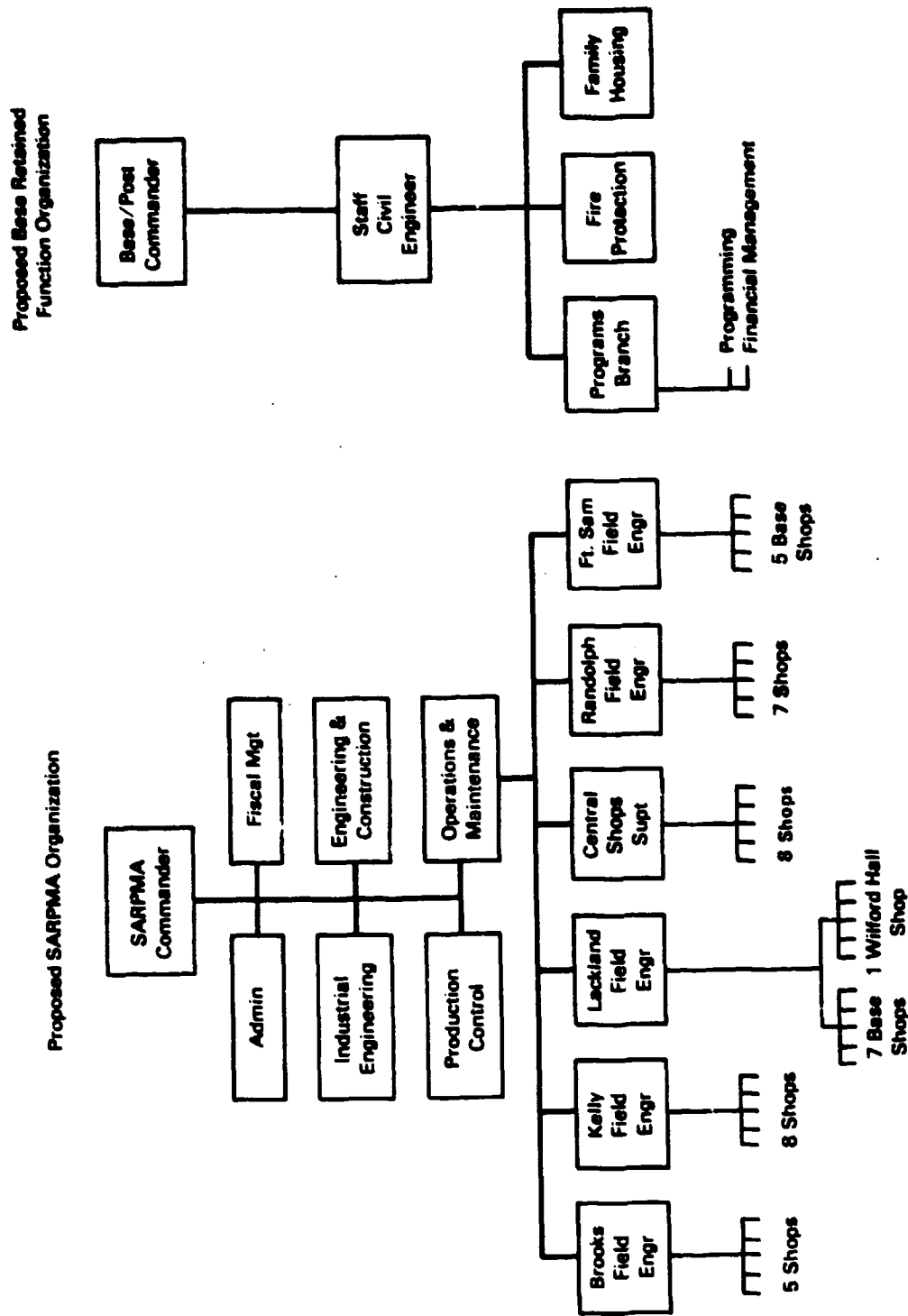


Fig. 1 — SARPMA organization — 1975 proposal

separation of consolidation effects from those achievable without consolidation, but total savings in the engineering and material control functions amounted to 90 manyears. Estimates based on manpower reductions in other functions indicate that about one-half (or 45) of the authorizations saved could have been saved through actions within the individual base organizations, with no consolidation.

CE reorganization was expected to net a manpower savings of 290, but 100 or so of these were from effects that were incidental to the consolidation. The dollar savings for the 290 authorizations (at FY 1974 pay rates) were estimated at \$2,335,000 annually.

Base CE organizations are supported by several other on-base activities: vehicles (transportation squadrons on AFBs); and supply, comptroller, procurement, and civilian personnel (all normally provided by Wing/Group Hq at AFBs). Although additional manpower savings of 54 authorizations were identified in these areas (including 29 for COCESS implementation in the Supply function), offsetting nonpersonnel costs (including COCESS and contract A&E service costs) resulted in a cost increase for support of the CE function of about \$100,000. Net total savings for SARPMA implementation were thus estimated at about \$2.2 million annually.

The annual 1974 cost of CE (and support) operations on the five installations was stated as \$52 million (but no contract construction or contract service costs were identified in that figure). Hence the expected savings were less than 4 percent of total annual CE/RPMA costs. Almost a third of the estimated savings were incidental to and possibly attainable without the consolidation.

### 1978 Implementation Plan

The Assistant Secretary of Defense (Installations and Logistics), whose office had directed that a San Antonio consolidation proposal be prepared in 1973, asked that the Air Force design an implementation plan following the publication of the 1975 cost analysis. The team was formed and an initial, slightly revised SARPMA organization and an implementation plan were formulated during 1978.<sup>1</sup>

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<sup>1</sup> San Antonio Real Property Maintenance Agency, *SARPMA Implementation Plan*, 10 February 1978.

The 1978 plan did not go into full detail as to expected costs or savings in dollar terms. The focus was on manpower authorizations and specifically on a target net savings of 306 (comparable to the 344 of the 1975 cost analysis but revised by subsequent changes in manpower authorizations and other requirements). The 1979 program reduced the 1974 baseline of 2910 authorizations in CE and dedicated CE support functions to 2852. The targeted savings number of 306 manyears left 2546 authorizations for the SARPMA plan (including dedicated support and base-retained functions). At 1979 civilian pay rates, which were about 35 percent higher than those prevailing in 1974, this would have equated to an annual savings of \$3.3 million. In SARPMA's first year of operations, its total "business" was about \$100 million; so dollar savings from manpower reductions were only about 3 percent of the total, although the manpower reduction itself was almost 11 percent.

The 1975 proposal had allocated 2064 authorizations to SARPMA, including field engineer units located at the five bases, an additional 396 to base-retained functions, and 106 to dedicated support. In the 1978 plan, the 2546 authorizations allowed after deduction of the 306 to be saved left only 1926 for SARPMA itself. The figure was driven by the decision to account for base-retained functions and dedicated support first, leaving the remainder to SARPMA. Figure 2 shows the planned 1978/79 organization, manpower authorizations, and dedicated host base support. Of the 1926 SARPMA authorizations, 376 are in M&E functions and 1550 in O&M, compared with the 1975 figures of 357 M&E and 1707 O&M.

The operational concepts in the 1978 plan were basically the same as those described in the 1975 plan except in the supply area. Instead of a COCESS arrangement--a concept criticized by GAO<sup>2</sup> at about the time the implementation plan was being formulated--a modified Standard Base Supply System (SBSS) as a satellite of the Randolph AFB supply system computer was chosen for supply management. Two authorizations had been identified in the 1975 proposal for monitoring the COCESS operation; 20 were allocated in the new plan for supply support at SARPMA central.

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<sup>2</sup> U.S. General Accounting Office, Letter to Secretary of Defense (B-146874) dated November 2, 1976. A follow-on study was later published as *Military Contractor-Operated Stores Contracts are Unmanageable and Vulnerable to Abuse*, MASAD-81-27, July 8, 1981.

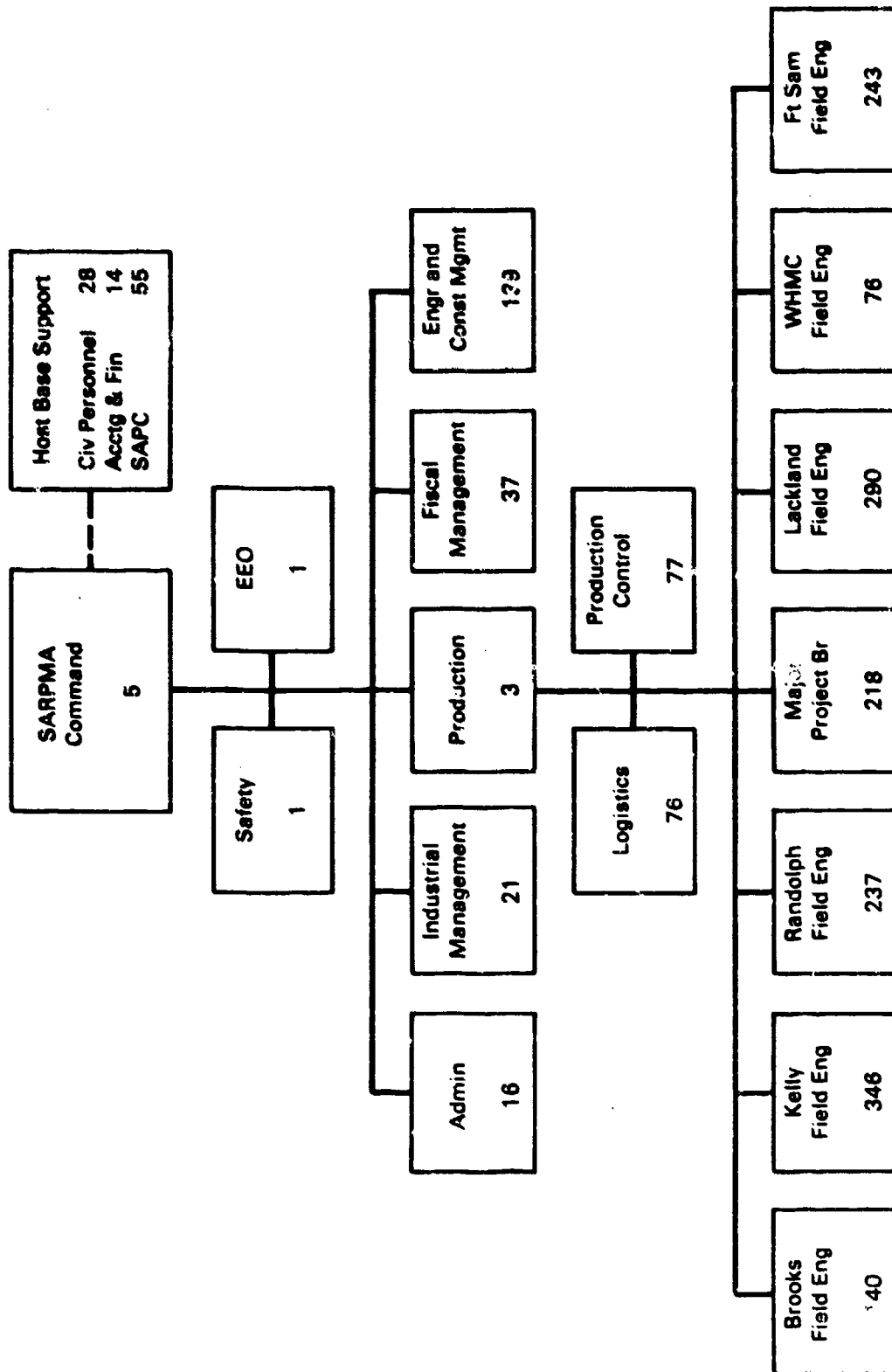


Fig. 2 — SARPMA organization—1978 plan

The supply system was to prove a major factor in early SARPMA problems.

The 18-man net increase for supply (over the 1975 proposal) is nearly equal to the increase in M&E functions in the 1978 plan. The reasons for the sizable reduction in O&M forces--from 1707 in the 1975 proposal to 1550 in 1978--are more difficult to follow. They are probably attributable to two factors: (1) the reduction in base CE authorizations between 1974 and the 1979 program, and (2) the constraint imposed on manpower authorizations by the target savings figure. The data available are far from clear, but there is at least a suggestion that SARPMA was undermanned at its inception.

#### Developments Since 1978

SARPMA began operating on 1 October 1978 as an industrially funded activity. Activities funded by appropriated funds, such as conventional base CE organizations, are bound by both manpower authorization and manyear constraints. Workload requirements above the manyear limitation for such organizations must either be forgone or (if funding is available) contracted out. By DoD guidance, industrial fund managers are supposed to have flexibility in their use of resources and may assign personnel over and above their authorized strengths on a temporary or overhire basis when they feel additional organic, rather than contract, effort is preferred. The manpower constraint is binding only at year end, when the number of employees on board must not exceed the authorized end-strength ceiling. SARPMA has made extensive use of temporary and overhire civilians in handling its workload. The end-strength ceiling is met by laying off overhires and releasing on-call (temporary) personnel shortly before the end of the year. They are rehired or recalled as needed after the new fiscal year begins. This flurry of firing and rehiring every year is obviously disruptive (and probably imposes additional costs), but it permits the SARPMA Commander to make use of organic labor as he sees fit and still conform to the manpower end-strength ceiling.

By the beginning of FY 1983, SARPMA's authorized strength was down to 1878, but it had an assigned strength of 2319 personnel shortly thereafter (November 1982). The assignments were allocated 444 to M&E functions (versus 376 authorizations in the 1978 plan) and 1860 to O&M (1550 in the 1978 plan). Based on current Air Force manpower standards<sup>1</sup> and current SARPMA workloads, SARPMA is short by about 750 authorizations, so it is covering about 60 percent of its deficit through temporary and overhire personnel.

### Analysis and Conclusions

The growth in SARPMA's manpower utilization from an initial, authorized level of 1926 manyears to the current assigned strength of 2319 (20 percent increase) may not seem out of line when compared with its growth in business volume from about \$100 million in 1979 to an expected \$165 million in 1983. But that \$65 million growth in business includes inflation--about 35 percent over this period. The 1979 volume would therefore equate to \$135 million today, leaving real growth in volume at about 22 percent, a figure that is equivalent (within the uncertainty of our data) to the growth in size of the SARPMA workforce.

That the SARPMA workforce has grown in proportion to other components (contracts, materials, and utilities) of SARPMA's business tells us nothing definitive about SARPMA's efficiency, but the steady and roughly equal growth in the "overhead" M&E force is more notable. M&E savings were not the only source of purported savings in the SARPMA consolidation; overhead reductions in the O&M forces were forecast also, and we have no data to tell us if the SARPMA workforce is more productive overall than base CE organizations. Given the small expected savings, the information at hand is too crude to prove anything concrete about SARPMA having accomplished its cost savings goal, but the level of growth in M&E personnel suggests that it is unlikely.

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<sup>1</sup> Many of the standards are different from what they were in 1975 or 1978; hence a consistent audit trail is not readily available.

## SUPPLY OPERATIONS

The 1975 cost analysis attributed part of the consolidation savings in manpower to use of a COCESS concept for supply management. The data examined were incomplete, but there were between 29 and 58 manpower authorization savings identified as resulting from that concept. This was offset by a \$965,000 annual cost increase in material costs. The net effect was a cost increase of \$350,000 to \$650,000 annually, but COCESS was recommended because of expected reductions in pipeline times, backorders, and work backlog, and the system was expected to provide greater ease of operation. When COCESS was abandoned in the 1978 implementation plan, 20 manpower authorizations were added to operate the substitute SBSS operation.

The SBSS is primarily oriented toward weapon system supplies, which are characterized by a preponderance of specialized items backed by depot stocks. In contrast, CE supplies consist largely of common building supplies; plumbing and electrical parts; consumables used for cleaning and maintaining grounds, buildings, and utilities plants; and other such familiar items. Most are available from local distributors and wholesalers in any moderate-sized city. The generally longer leadtimes and other complexities of centrally managed items, for which the SBSS is designed, are not well suited to CE supply management. The Air Force has long recognized this fact; and on bases where the SBSS is used for CE supplies, the arrangement works satisfactorily only through a close working relationship between CE and supply personnel. The Air Force has also been experimenting for some time with alternative systems in hopes of developing one that is more suitable for CE supply management.

The SBSS is also fairly labor-intensive, and SARPMA's scale of operations would have warranted (by manpower standards) about 10 times the 20 authorizations provided in the 1978 plan. SARPMA's requirement for CE supplies was much greater than any experienced on a single base. The bases included in the consolidation included three of the largest (in terms of population and facilities) in the Air Force. Added to this were problems of integrating identical items with different supply codes (local purchase items are coded individually by each base) and items

managed under a completely different (Army) supply system. In addition to requiring shifting of manpower resources into the supply function, the system's problems generated leadtimes for a job order bill-of-materials of 180 days in SARPMA's early days. More recently, the leadtimes are reported to be around 100 days. In comparison, facilities using COCESS or GOCESS (Government Operated CE Supply Store) required less than 30 days, and at facilities with the SBSS but a much smaller scale of operations, perhaps 60 days.

Current SARPMA manning for the supply system is 131 manyears, which more than accounts for the personnel growth in N&E (although some functions have contractor support as well). The supply problem has probably contributed more to overhead and to poor responsiveness than any other single factor. SARPMA personnel have put a great deal of effort into solving this problem, and a new supply system is being tested. The plan is to have it in place across SARPMA and the bases being supported in FY 1984. It is hoped that the new system will bring improvements in performance and some reduction in overhead costs.

The problems experienced with the supply system were a case of the base-level analogy being a poor guide to what would happen in a much larger organization. The new system, if it is successful, may ease the transition problem if future CE consolidations are brought about. But the same system will probably make base CE organizations more efficient, particularly with large CE operations (as at Kelly, Lackland, and Randolph before consolidation).

#### **CUSTOMER VIEWS OF THE COST OF SARPMA SERVICES**

Only a few of SARPMA's customers could be interviewed for this survey, but other materials from SARPMA support the conclusion that their observations were typical of most of its customers. The strongest complaints voiced by base commanders and other functional managers concern the cost of services. To the base commander at a facility with its own CE squadron, the cost of a minor repair job is the tradeoff (opportunity cost) of one job done by the repairman instead of another. Furthermore, unless the job requires immediate, emergency attention or is particularly time-consuming, the CE manager may be able to wait for what would otherwise be slack time (when a repairman might be between

scheduled jobs or awaiting materials) and accomplish the job at little or no cost in other work forgone. The situation appears quite different to the commander under SARPMA procedures.

Under the industrial fund concept, all costs of operations must be recovered through customer charges. Overhead charges for indirect material, shop/section supervision, production management, and all other SARPMA management, administration, and support are added to direct labor charges (and to contracted-out services and projects). They appear as direct charges to the customer. When a request for a repair that could easily fit within the construct described above--a small job done when the workload permits--brings a bill for \$60, the customer is likely to doubt that he is saving money through the consolidated service.

The bases complain that they do not receive the extra budget that should come with this way of operating--whether or not they believe that the manpower savings in their budgets are equivalent to the increased direct costs to the base under SARPMA. Furthermore, the bases complain that they have no alternatives and lack the leverage available to the base with its own CE organization. SARPMA is the sole-source supplier. Contract services also flow through SARPMA and have overhead charges attached to them (for contract management, etc.); hence contracts, too, appear more costly than under a conventional CE organization. Thus far the evidence of SARPMA savings has not been convincing enough to assure base customers that overall costs are less than they would be otherwise.

SARPMA has also tended to use in-house labor for much larger jobs than would be undertaken by base CE organizations, rather than putting them out for contract. It is unusual for a base CE squadron to take on jobs much over 300 manhours, but SARPMA has undertaken jobs in the thousands of manhours. Recently, ATC has imposed a ceiling of 2000 manhours on SARPMA in-house jobs to urge more frequent use of contracting out. It is believed that the effects of competition will be used to greater advantage if contract efforts are used more.

SARPMA's volume of operations might be expected to produce some economies through bulk purchasing or through better utilization of specialized skills and equipment. There was some hint of this in the 1975 proposal (in the area of special equipment), but now the effects apparently are not very great. Because the principal installations

involved in the consolidation were quite large, most of the economies of scale in those areas may already have been realized.

SARPMA procedures for charging for purchased utilities have some advantages for base budgeting, if SARPMA billing rates are established early enough in the budget cycle. Utility rates (per kwh etc.) are fixed at the beginning of the year and kept constant throughout the year. Thus, unexpectedly high inflation in utility rates is not passed on to the customer until the following year. But variability in utility usage may make this advantage inconsequential in years other than those with the highest inflation.

Because cost savings are not clearly evident, the higher direct costs that SARPMA customers perceive are likely to continue to be a source of dissatisfaction. If real overall savings do not come identifiable, it will be especially important for SARPMA to have a good means of demonstrating the fact to customers. Our interviews showed that base customers were willing to make some sacrifice in convenience or responsiveness of service if they could be convinced that genuine savings accrued to the taxpayer.

## **RESPONSIVENESS/ADEQUACY OF SERVICE**

Another frequent customer complaint concerns responsiveness of services under SARPMA. The general complaint is that service requests or job orders that would be processed readily under a conventional base CE organization require inordinately long leadtimes and excessive management attention under SARPMA. The two areas that SARPMA personnel believed contribute most to this are the supply system and the management information system. The former was discussed above. The management information system adopted by SARPMA when it began operations was the Base Engineer Automated Management System (BEAMS). This system is used at base level throughout the Air Force to keep track of service and work requests for CE activities, prioritize the work, allocate labor and material resources to it, identify costs, and follow the work through to completion. As was the case with the supply system, the volume of work was too large and the system too labor-intensive to work effectively in the SARPMA environment. The system was incompatible with the Army's way of doing business as well. A new management information

system is now under test and is expected to be operational soon. We have no reading on its possible costs, but its main intent is to make SARPMA's operation more effective. If the system does prove less costly or more effective than BEAMS, then the possibility again arises that the innovation developed for SARPMA may also be valuable to conventional base CE organizations.

In some aspects, disadvantages of a centralized support agency may be unavoidable. First, the base commander, civil engineer, and other customers are bound to lose some direct control under a consolidated arrangement. Second, conflicts arise, because with competing demands from independent bases and commands, it is almost impossible to assure equal treatment of each customer's priorities. Both of these characteristics contribute to some degree to customer dissatisfaction or frustration in dealing with a consolidated/centralized support agency.

Customers interviewed in this study generally praised the professionalism and dedication of SARPMA personnel in the goal of making the system work. Nonetheless, the customers' lack of direct control and flexibility in the use of CE resources caused them problems. Since at least the 1970s, it has been Air Force and DoD philosophy to give the local commander responsibility for mission activities and authority over the resources needed to accomplish them. The staff civil engineer under SARPMA has the responsibility for providing needed CE services, and he has financial resources for that purpose, but he is limited in his control over the labor and other resources (which belong to SARPMA) that he finances, except for base-retained functions. He cannot fire, demote, or reassign personnel whose performance is unsatisfactory. He cannot cancel a contract or refuse to go back to a contractor, because he is only the indirect monitor of the contract. He can, of course, bring his complaints to SARPMA management, but his influence is greatly reduced over what it would be on a base with a conventional CE organization and lines of authority. The base commander's ability to shift resources in response to changing needs is similarly constrained.

If SARPMA's workforce were endlessly flexible, conflicts between demands could be avoided (the workforce could expand or contract as needed to respond to the variations). It is not, of course, and times arise when SARPMA managers must choose which request to work on first.

Thus the customers see a lack of the sense of urgency that would be present in a base CE organization, because the base organization would presumably be more closely in tune with base priorities. No matter how much the overall performance of the consolidated operation improves, this characteristic is likely to remain to some degree. A local commander may be willing to increase his financial input into a given area for more or quicker service but be frustrated in the attempt because SARPMA cannot respond in time to meet his requirements. The situation may be partly alleviated by the new management information system, but the conventional arrangement of having a base CE officer, in charge of his own resources, as an integral part of a team guided by the commander provides a type of direct management involvement and management information that is hard to replace.

Although the bases in the San Antonio area lack combat missions whose need for quick response would be hampered by disconnected services, they do have missions for which CE support is vital. Kelly AFB is the home of San Antonio Air Logistics Center (SAALC)--a major Air Force center for management and repair of weapon systems and components and for modification, rework, and repair of aircraft and engines. These services are similar to a commercial operation in an industrial plant. The maintenance function is an industrially funded operation and employs a civilian workforce of more than 8000. Civil engineering provides important support to the plant in the form of (1) minor emergency repairs to buildings, pavements, and maintenance-related utilities (steam, compressed air, and cold water generation), and (2) major repairs and alterations to these facilities. Overall, the maintenance function demands about 50 percent of the CE workload at Kelly, and it would also command a major share of the base CE manager's attention. The size of the workforce and the nature of many maintenance tasks makes CE support extremely time-critical in some instances. Under SARPMA the maintenance plant managers often perceive an inadequate sense of priority and urgency on the part of the CE workforce, poor feedback, and difficulty in getting timely progress and status reports from the central organization. Furthermore, resolution of problems required higher levels of command and management (both from SARPMA and from SAALC) than should be necessary.

Many, but not all, of SARPMA customers interviewed agreed that the organization's attempts to improve service responsiveness have brought steady improvement. Although new management innovations should help, some problems are likely to remain because of the inherent characteristics of centralized support, including (1) lessened ability of the local manager to control and make tradeoffs among his resources, and (2) conflicts due to demands from different, independent commanders and the resulting dilution of their individual priorities.

### GENERAL OBSERVATIONS AND CONCLUSIONS

The San Antonio area appears to present some ideal characteristics for experiments in consolidation of DoD activities. The major Army and Air Force installations there have little in the way of immediate combat responsibilities or the need to provide rapidly deployable units. They are all within easy driving distance of one another, and some inter-base support relationships already exist for purposes of economy. The situation should have offered all the opportunities for cost savings in consolidation with minimum likelihood of impairment to mission activities.

Nonetheless, some factors have detracted from the supposed advantages (economies) of consolidation. First, because all of the bases in San Antonio except for Brooks AFB are well above average in size and scale of operations, some economies of scale are realized even without consolidation. That fact may have been reflected in the small relative savings predicted in the cost analysis report that preceded SARPMA's formation. It proved to be overoptimistic to expect that a single, large CE organization, essentially scaled up from a smaller base-sized CE operation, could operate at least as efficiently as its smaller analog and with considerable overhead savings.

The establishment of SARPMA was mandated by ASD(I&L) despite the marginal savings that were promised, and the implementation plan was constrained to enforce a manpower authorization reduction that was not explicitly justified. The constraints on number of SARPMA personnel, in particular, resulted in an initial plan that appeared to be undermanned, even if the earlier, optimistic assumptions about simple scaling-up from base-sized organizations were accepted.

Fortunately (for its customers) or unfortunately (for those most concerned about manpower savings), the IF concept under which SARPMA was organized permitted it to add personnel to help respond to the problems that began to arise early in its operation. After four years of operating experience, the general impression gained from SARPMA personnel is that the system is working and is improving services to its customers. They are less positive about potential cost savings. Some customers concur that responsiveness is improving, but they do not generally expect that SARPMA will ever be as responsive as a base CE organization, and they are generally negative about prospects for real cost savings. They have little expectation that the operation will ever prove as cost-effective on the whole as the base CE organization.

The IF arrangement under which SARPMA operates has some inherent problems in the incentives it provides for efficient operation. If a base commander with his own CE organization can accomplish CE functions at lower than expected cost, the difference may be made available for other Air Force or base-level unfunded requirements. SARPMA is guaranteed to recover its costs; hence the only incentive it has to more efficient accomplishment of its workload, through contracting out or management initiatives, is good intentions. It has worked to lower its costs in many areas, and continues to do so, but the absence of financial incentives is bound to be a disadvantage.

SARPMA was instituted as a permanent operational change--not an experiment. But it can be a valuable experiment, and that purpose should probably be incorporated into its mission. Procedures should be established to define a basis for comparing SARPMA with alternatives and to monitor progress toward the goal of more cost-effective RPMA support. Some areas are more likely to benefit and some to be adversely affected by consolidation, and monitoring SARPMA's operation should help in identifying these. Consolidation has a strong following at present. The Air Force could benefit from using SARPMA as an ongoing laboratory for looking at consolidation effects in detail. The investment in creating it has already been made, and it may prove even more useful to test new consolidation proposals (e.g., in other functional areas) before they become accomplished facts.

#### IV. IMPLICATIONS FOR BASE SUPPORT CONSOLIDATION EFFORTS

##### CONSOLIDATION COSTS AND BENEFITS

SARPMA was mandated by the Office of the Secretary of Defense under remarkably low expectations as to the potential savings it could bring. Its formation has been costly in terms of both turmoil and dollars to accomplish the difficult task of creating what proved to be a very different type of support organization. But there has been no careful measurement either of the one-time costs to accomplish the transition or the continuing costs and benefits of the operation. With current emphasis on and expectations for consolidations in base support activities, a thorough analysis of SARPMA's past, present, and expected future costs and benefits is in order. It is the only extensive example available and should serve as the baseline for understanding in advance how other, similar consolidations of greater or lesser scale might perform.

The Army recognized the measurement problem when it examined SARPMA's history in preparation for its consolidation effort in the Washington, D.C. area. The Engineering Activity, Capital Area (EACA) is an Army experiment consolidating RPMA support for Army installations (and the Defense Mapping Agency) in and near Washington. The Army began this experiment by establishing a baseline for both cost and the level and quality of service; they plan to track both elements over the five-year experiment period before deciding whether to make the move permanent. A similar experimental approach would be well advised for any future large consolidations.

Consolidations are costly to implement. That factor is a major consideration in the prime recommendation offered by the former Vice Commander of SARPMA in a recent article on "lessons learned" from his experience. He recommends that the same approach be used as that taken in A-76 comparisons (comparisons of in-house versus contract alternatives): "If consolidation is not at least 10 percent cheaper, do not do it. The turmoil is not worth it."<sup>1</sup>

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<sup>1</sup> Colonel Allen J. Sailer, "The SARPMA Story," *The Military Engineer*, January-February 1983.

## CONSOLIDATING ON A LESSER SCALE

Examination of the SARPMA operation and customer reactions to it suggests another factor in consolidations. Careful thought should be given to the question of which activities benefit from centralized operations and which do not. Of course the main theme in the SARPMA plan was savings in overhead and supervision--hence the desire to reduce base-retained functions to a level where that overhead could be eliminated. Traditional organization structures and division of functional responsibilities are already disturbed by consolidations, so it is worth considering whether some of the responsibility that currently falls under SARPMA (or an analogous organization in a different consolidation) might be more efficiently handled by returning part of it back to bases, even if it means breaking up traditional function definitions.

An inordinate number of examples of poor responsiveness brought up by base customers involved fairly routine activities. For example, a simple order is submitted for the rental of temporary facilities to support troops on a field exercise. The order is lost in the shuffle of SARPMA orders, whose volume may be a factor of four greater than those on a single base, and is not filled or is delayed, perhaps disrupting the exercise and wasting management effort on what should have been a routine transaction. The extra layer of bureaucracy is excessive in this example, and perhaps in routine contracting for utilities and annual services such as normal grounds maintenance. If such activities were the responsibility of the base, the central facility's management workload would be reduced (and reduced by items that seem to cause disproportionate problems), and the new base workload could probably be readily absorbed under the base's organization structure. The savings in management actions otherwise required by the central agency for activities that are essentially integral and routine to the functioning of the base could readily make up for the possible increase in overhead staff.

Clashes between the chief base CE officer (the Staff Civil Engineer) and the chief SARPMA representative on base (the Field Engineer) are often a problem--and a main source of the Staff Civil

Engineer's feeling of inadequate control over the workforce. The Army's EACA arrangement in Washington is different from that of SARPMA in that the EACA commander is also the engineer for the Military District of Washington--that is, the same individual wears two hats and controls both the financial resources and the engineering workforce. SARPMA personnel have suggested a variation on this: Some of the same advantages of the Army's arrangement, and a partial return of control to the base, could be obtained by assigning both Staff Civil Engineer and Facility Engineer positions to the same individual.

### OTHER CONSIDERATIONS

The SARPMA experience presents the basic message that things are unlikely to go as smoothly as plans and abstract exercises predict. Consolidation is offered as a straightforward concept that should have considerable payoffs, but it turns out not to be so simple. Large expansions of organizations designed around a single-base-sized scale of operations may well strain the limits of the organization or the systems designed to support it. The support requirements of some installations may simply not be suitable for centralized control from a detached site. (And industry practice, tending to give plant managers full authority to decide when centralized services are beneficial, seems to confirm this.) If services are unsatisfactory after the organization is set up, the prime concern of the new agency will probably be to improve services first and worry about reducing costs later. The cost advantages of consolidation should not be taken for granted. Failure to follow up and test the consolidation to see if it is moving toward its intended objectives, and if not why not, will generate chronic doubts and uncertainty and lead to poorly guided decisions in the future.